The Role of Organizational Competences in the Evolution of Business Models

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Abstract. This paper presents the use of a conceptual framework designed for the management of organizational competences to contribute to the evolution of the business model of an enterprise. The framework, developed based on a detailed review of the history of the car manufacturer Toyota, was used for a Delphi study and an action-research applied in the furniture industry. The results suggest that it is applicable for ex-post analysis of organizational changes, as well as a strategy planning tool.

Keywords: Organizational competences, business model, competitive advantage, competence management, organizational change.

1   Background

Competence-based theory explains the competitiveness of an enterprise based on its internal characteristics, inspired from the resource-based view of the firm [1], [2], [3]. An organizational competence (OC) is the deployment, combination and coordination of a firm's resources, knowledge and individual competences along different value streams to attain strategic objectives [4], [5]. An OC is not located in a single resource or person, but in the interaction of several of them.

OCs are dependent on the level of dynamism of the environment, with stable contexts calling for a different set of OCs than highly dynamic environments [6], [7]. An OC can be evaluated according to characteristics like its perceived value, rareness, imitability, substitutability and applicability to different markets [8], [9]. These characteristics allow categorizing the competences as operational or dynamic [10], [11] and also as core, specific or basic [12], bringing different levels of competitive advantage for the company [13].

The management of OCs is a responsibility of top and functional managers [14]. It consists in developing new OCs and improving or replicating existing ones, as well

as preventing them from becoming core rigidities [12], [15]. This development can be accomplished through different mechanisms, such as hiring, on-the-job training, job rotation, external and internal formation, intensive and extensive training, partnerships, R&D, benchmarking, technological innovation, mergers and acquisitions, utilization of a knowledge referential, and participation in communities of practice [16], [17], [18]. The complete lifecycle of an OC can be divided in four phases: founding, development, maturity and selection, when it can be renewed, redeployed to other markets and functions, or retired [15]. It is usually measured in an ascendant five interval scale [18], [19].

1.1 Business Model

The objective of the concept of business model (BM) is to help understand, analyze, manage and prospect new and evolutionary business logics for a company [20]. It corresponds to an intermediary level of analysis, linking strategic issues of profit strategy, revenue and cost structures, to functional decisions [21].

The first occurrences of the term BM in academic research appeared at the end of the 1990's, in studies about digital and virtual companies using new ICT for e-commerce and e-business. Since then, several frameworks to define a BM and its main components have been published [22]. The BM approach used in this study is an adaptation of the works of Boyer and Freyssenet [23] at the GERPISA (Permanent group for the study of the automobile industry and its employees), chosen because of its academic origin and simplicity. A BM is then defined as the representation of a company's strategy, processes and people under specific environmental conditions.

As these components are interrelated, changing one of them may impact the others, causing potential conflicts and achieving unpredictable results [23]. However, in evolving or dynamic environments, these changes become necessary and vital to the survival of a business. The sustainability of a company is dependent on the coherence of the three main components of its BM with the environment.

We propose that the management of OCs can help achieve this coherence on a regular basis, and a framework to do so is presented. The following section explains the research methodology. Section 3 presents the framework and Section 4 exemplifies its usage with two examples. Section 5 closes the paper with some conclusions and identification of future researches.

2   Methodology

This research focused on defining what the roles of OCs and their management are for the evolution of the BM of an extended enterprise. To develop and propose a conceptual and referential framework useful for both research and practice, three methods were used: (1) literature review, (2) a Delphi study, and (3) action-research (Figure 1). The choice and application of these methods was guided by a longitudinal and contextual view of organizational change, linking the context, the content and the process of change [24].
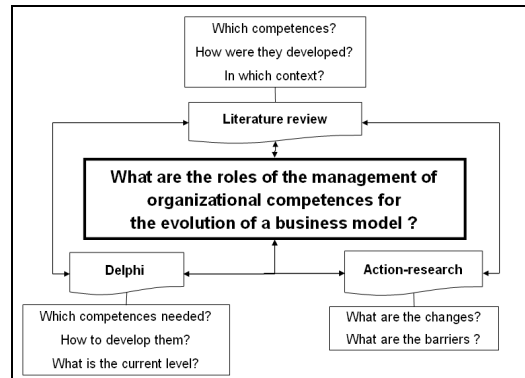
Fig. 1: Methodological framework.

The literature review was based on a detailed codification and analysis of the evolution of the Japanese car manufacturer Toyota, a typical example of extended enterprise. The reasons for this choice were the sustained competitiveness and profitability of this company until 2005, combined with a vast bibliography available on the subject. The codification strategy was made in three steps: the first was the description of the socio-economical environment in six 10-year periods, from 1940 to 2000. The second step was the identification of OCs and the development mechanisms utilized by the company in each period. The third step consisted in establishing the relationship between each OC identified with a specific BM component. Triangulation with the Delphi and action-research methods explained below, were used to enrich the results of the literature review, thus increasing the robustness of the conceptual framework.

To be able to transpose, adapt and adequately apply the learning from the literature review to a specific context, a Delphi study with expert researchers was conducted. Delphi is a sequential group communication technique used to obtain consensus through several feedbacks to and from the participants, who do not need to be together. After each communication round, each participant receives a synthesis and a statistical analysis of the group's responses, being then asked to change his opinion or to explain the reasons for not changing it. The iterations are conducted until an acceptable consensus level is achieved.

To identify specific difficulties and barriers to implement and sustain an organizational change from an enterprise's point of view, an action-research was conducted in a company under real change. This method is characterized by a collaborative problem-solving relationship between company professionals and researchers to solve real problems and to generate new knowledge.

3   Conceptual Framework

The codification and analysis of the evolution of Toyota from OC and BM points of view led to the following observations:

- There was a gradual change in strategy, starting from the just-in-time upon foundation, then complemented by a constant cost reduction strategy in the 1950's, the identification of value from the client standpoint in the 1970's and more recently technological innovation for hybrid engines;
- These strategy changes were translated into a gradual development of OCs, starting with production, a culture of incremental improvements and human capital management, then expanding to supply, sales & marketing and product development, reaching its main suppliers and dealerships;
- The main development mechanisms used were benchmarking, internal and extensive on-the-job training, partnerships, R&D and the utilization of a structured scientific method for learning (kaizen and plan-do-check-act).

It is then possible to propose two cornerstones for a successful change of a BM by the management of OCs:

a.   The management of OCs is a strategic process, under the responsibility of top and functional managers.

b.   It is cyclical and iterative, dependent on the evolution of internal and external environments. A new competence is added to a set of competences already in place, which are rarely abandoned, but improved.

As a strategic process, the development of OCs requires formulation and implementation phases. The formulation phase proposed has two steps, and the implementation phase has one. The three steps are described below with actors and actions, and a graphical representation is presented in Figure 2.
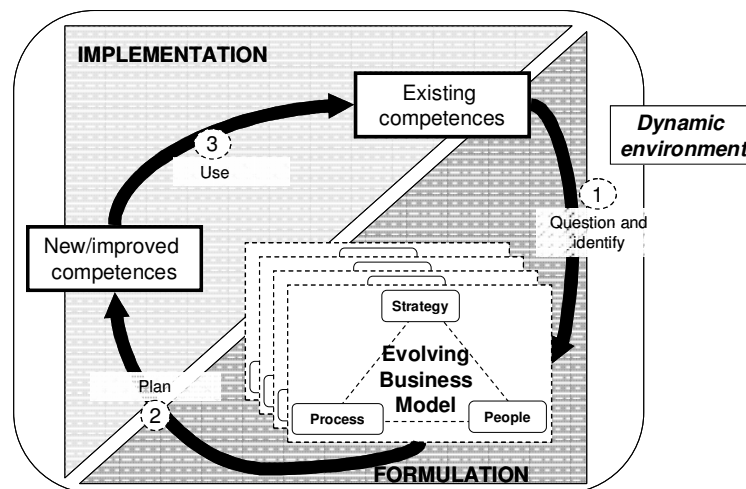

Fig. 2: Conceptual framework

1)   Top and functional managers question and evaluate the already existing OCs, the level of competitive advantage brought by them, and the components of the BM based on the environment situation. It is then possible to identify misalignments and translate them into OC gaps;

2)   The next step is to plan the development and improvement of OCs identified in the previous step, taking into consideration the different development

mechanisms available. As in any good planning approach, risk analysis, prioritization, drawing roadmaps and defining milestones are useful practices;

3) At the third step, the managers implement the plan and actively use the new OCs so they become effective and enter the set of existing OCs of the enterprise. The cycle can then restart to evaluate the competitiveness of both the recently developed and previously acquired OCs.

This framework represents a dynamic OC, leading to the evolution of operational OCs aligned with specific components of the BM. As so, it is supported by specific learning mechanisms [25]:

- Experience accumulation (behavioral approach) : it is an iterative process, allowing the adoption of routines by the individuals based on trial and error and selection of sucessful past behaviors ;
- Knowledge articulation (cognitive approach) : it proposes a formal process of collective discussion about the main elements of the enterprise, guiding constructive dialogues between different business functions ;
- Knowledge codification (explicit knowledge) : the framework gives origin to an action plan for the development of Ocs, which is a codification process.

Another important issue is the payoff of implementing such a framework in an enterprise. Based on criteria such as the level of dynamism of the environement, the size of the enterprise and the economical importance of the elements questioned [25, 26, 27], the framework would bring bigger gains for medium to large extended enterprises, working in dynamic environments. The integration of the concept of BM assures that the most important elements are always questioned.

Even if the recent recalls impacted considerably the image and the performance of Toyota, we consider that the results are still valid for two major reasons. First, the observations are based on data and information up to the year 2000, excluding therefore the events and actions that led to the current crisis. Second, in taking the latest 10-years period, we see a major strategy change, focusing more on becoming the world's biggest manufacturer than on gradual and sustainable growth. In the next section, applications of this framework for strategy formulation and change explanation are presented.

4 Applications

4.1 Delphi

In this first application of the framework, a two-round Delphi study was organized with expert researchers and expert service providers from the furniture industry in the Canadian province of Quebec, which needed to identify and implement innovative BMs to assure its sustainability in a different economic context than in the 1990's. Mass customization had been identified previous to the survey as a strategy that could potentially re-establish the competitiveness of the sector [28].

The objectives of the survey were the identification of (1) the OCs needed to succeed with a mass customization strategy, (2) the level of competitiveness brought by them, (3) their current level of maturity in the industry and (4) the best mechanisms to develop them, covering steps 1 and 2 of the framework [29].

The metaphor of a house was used to represent the results of the survey, expliciting the strategic objectives of the organization as the roof, the core OCs bringing sustainable competitive advantage as the pillars, and the basic OCs bringing competitive parity, as the foundation of the house (Figure 3). The human capital elements are found in the centre with the selected development mechanisms. A replication of the research is planned for 2011 to evelute the progress accomplished.
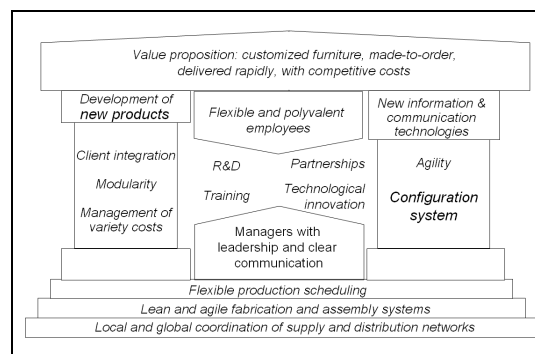

Fig. 3: Organizational competences for the furniture industry.

4.2 Action-Research

The action-research took place during a period of 18 months in two plants of a company engaged in a change process, which had started before the proposal of Figure 3. The required OCs had been identified previously by the managers (Step 1) as related to the concept-to-launch and order-to-delivery processes. Their development was planned and they were implemented during or slightly before the action-research period (Steps 2 and 3).

By applying Step 1 of the framework for a second cycle, this time as part of the action-research, a major gap was identified regarding the sales-to-order process. This urgent need to develop new OCs may have resulted from an incomplete environmental analysis done by the managers at the first cycle. One year after, the company ceased its operations.

As the framework was derived by induction from the analysis of the history of Toyota, there may be a possibility that cultural differences between East and West play some role in this failure. However, western enterprises have already proved that they can improve tremendously their performance in a sustainable way [30]. Easier travelling, distance learning and virtual social networks are also helping to reduce the cultural boundaries, making adaptation and adoption of different methods easier, and

that on both senses. With this in mind, we suggest that the discussion of failures should be held rather on an enterprise culture level than on a national culture level.

To create a dynamic capability, an enterprise needs to have an organized team with some type of leadership to act jointly, as well as a central objective and a cyclical learning mental model [15]. Therefore, it is the lack of one of these pre-requisites that will more probably dictate the success of founding such a dynamic OC.

5 Conclusions

This paper proposed and exemplified the use of a conceptual framework defining the role of OCs and their management for the evolution of the BM of an extended enterprise. It proposes the management of OCs as a way to bridge the gap between changes in the environment and business sustainability. The framework is a cyclical process composed of three steps under the responsibility of the top and functional managers, supported by key organizational learning mechanisms.

The framework integrates the concept of business model with the theories of competence-based management and organizational learning, increasing the focus of these last. Even though a BM approach with three main components was used in the framework, its applicability to other BM approaches can be studied in future research.

Testing and adaptation to other types of collaborative networks, including the definition of BM for collaborative networks, is another potential field of research.

From a practical point of view, the framework presented a good potential for ex-ante strategy formulation and ex-post strategy explanation, as shown by the applications. Issues of enterprise culture may play a major role for a successful development of the framework in an enterprise. Research on the best development mechanisms for such a dynamic OC is therefore important, integrating "soft" concepts such as leadership, ownership and mental models.

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